

REMARKS

Applicants have corrected some minor typographical errors in claim 6 as well as corrected the multiple dependency of claim 24. Applicants have deleted the “,” which appears toward the end of claim 1. No new matter would be added to this application by entry of this amendment. No new issues would be raised by entry of this amendment as applicants are simply correcting some minor technical matters. Entry of applicants' amendment and full consideration thereof at this stage of prosecution is respectfully requested. The Advisory Action of April 1, 2004 indicated that Applicants' amendment of February 23, 2004, **would be entered** but as of yet, has not been entered. Applicants submit herewith the same amendment and respectfully request entry.

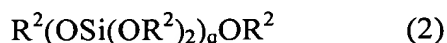
Upon entry of this amendment, claims 1-3, 6-21 and 23-24 will now be active in this application with claims 1-3, 6 and 23-34 being under active consideration.

REQUEST FOR RECONSIDERATION

The present invention is directed to a coating agent.

Sol-gel processes have been used to provide substrates with desired functional properties. Easy methods in which the coating adheres well to a glass substrate are still sought.

The present invention addresses this problem by providing a glassy-film coating agent comprising (1) a siloxane compound of formula (1) a compound which has a polymerizable group of an unsaturated double bond or a ring-opening cyclic group; (2) an alkoxy siloxane of formula (2), which does not have a polymerizable group; and (3) a tri or tetravalent metal ion. The compounds of formula (1) and (2) are as follows:



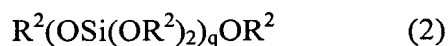
R^1 is a polymerizable organic group having an unsaturated double bond or a ring-opening cyclic group,

R^2 is an alkyl group having not more than 4 carbon atoms.

Thus it is clear that the compound of formula (1) is a polymerizable siloxane, as it is a siloxane having a polymerizable group of an unsaturated double bond or a ring-opening cyclic group, while the compound of formula (2) is a nonpolymerizable siloxane as the substituent groups R^2 are alkyl groups having not more than 4 carbon atoms, which are not polymerizable. Those of ordinary skill in the art would recognize that a siloxane having that a polymerizable group of an unsaturated double bond or a ring-opening cyclic group is a **polymerizable siloxane**, while a siloxane having only groups R^2 are alkyl groups having not more than 4 carbon atoms is a **nonpolymerizable siloxane**. These are existing claim limitations which have been argued by applicants. Applicants have discovered that the combination of components allows for a composition with high hardness and an affinity for the surface of the substrate as well as avoids difficulties with relaxation of stress often accompanied by the shrinkage of the film. Such a composition is nowhere disclosed or suggested in the cited prior art of record.

The rejection of claims 1-3, 6 and 23-24 under 35 U.S.C. § 103(a) over Hanson in view of Morishima and Terakawa is respectfully traversed.

The claimed invention relates to a coating agent comprising compounds represented by the following general formulae (1), (2) and (3):



where compound (1) has the polymerizable organic group R^1 having an unsaturated double bond or a ring-opening cyclic group and R^2 is a C_{1-4} alkyl group. The claim recites

that compounds (1) and (2) are present separately in the composition. A composition containing both compounds (1) and (2) is nowhere disclosed or suggested in the cited references.

Hanson fails to suggest a composition containing all three of the claim elements, and in particular fails to disclose or suggest a composition in which both compounds (1) and (2) are present.

Hanson, describes a coating compositions containing **an** alkoxysilane of the formula $R_xSi(OR')_{4-x}$ wherein R may be C_{1-6} alkyl, vinyl, methoxyethyl, phenyl, γ -glycidoxypentyl or γ -methacryloxypentyl. There is no differentiation between using groups which are polymerizable and those which are not. In fact, Hanson only exemplifies, as the group R, alkyl, methoxyethyl, and phenyl, which are not polymerizable and accordingly does not suggest the combination of having groups which are polymerizable as well as having groups which are not.

In contrast, the present invention is directed to a coating composition in which siloxane compounds having polymerizable groups (formula (1)) as well as those which do not have polymerizable groups (formula (2)) are used. The claim limitation of having compounds having polymerizable groups as well as those which do not have polymerizable groups is a claim limitation which is simply not taught by the prior art of record.

The advisory action of April 1, 2004 asserts that the argued combination of a polymerizable siloxane and a nonpolymerizable siloxane is a feature which is not presently claimed, citing MPEP 2145(VI). However, as noted above, the argued combination of a polymerizable siloxane and a nonpolymerizable siloxane is a present claim limitation in that a siloxane having that a polymerizable group of an unsaturated double bond or a ring-opening cyclic group is a **polymerizable siloxane**, while a siloxane having only groups R^2 are alkyl

groups having not more than 4 carbon atoms is a **non polymerizable siloxane**. Contrary to the assertions in the advisory action, applicants' have argue recited claim limitations.

Since the cited reference fails to disclose or suggest the claim limitation of a mixture of alkoxysilane compounds which have polymerizable groups and those which do not have polymerizable groups, the claimed invention is clearly neither anticipated nor made obvious by the reference and accordingly, withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

Morishima, describes a coating fluid comprising a reaction product obtained by subjecting (A) an alkoxysilane or aryloxysilane and (B) a metal alkoxide or aryloxide to hydrolysis and condensation reaction. There is no disclosure of an alkylsiloxane having polymerizable groups much less a disclosure of a mixture of alkoxysilane compounds which have polymerizable groups and those which do not have polymerizable groups. Quite to the contrary, this reference would suggest only to use alkoxysilane compounds which do not have polymerizable groups.

Terakawa, discloses a correction fluid and does not suggest a glassy-film forming coating agent which contains a mixture of alkoxysilane compounds which have polymerizable groups and those which do not have polymerizable groups.

In light of the above, it is clear that none of Hanson, Morishima or Terakawa suggest a glassy-film-forming coating agent comprising compounds of formulae (1) and (2). In light of the deficiency of the cited references to fairly suggest the claim limitation of a mixture of alkoxysilane compounds which have polymerizable groups and those which do not have polymerizable groups, the claimed invention is clearly not obvious from the cited references and withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Application No. 09/423,606

Supplemental Reply to Office Action of November 14, 2003.

Applicants respectfully submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Norman F. Oblon

A handwritten signature in black ink, appearing to read "Richard L. Chinn". The signature is fluid and cursive, with a large initial "R" and a trailing flourish.

Richard L. Chinn, Ph.D.
Registration No. 34,305